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ORIGINAL RESEARCH

Ruralization of students' horizons: insights into Australian health professional students' rural and remote placements

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Introduction: Health workforce shortages have driven the Australian and other Western governments to invest in engaging more health professional students in rural and remote placements. The aim of this qualitative study was to provide an understanding of the lived experiences of students undertaking placements in various nonmetropolitan locations across Australia. In addition to providing their suggestions to improve rural placements, the study provides insight into factors contributing to positive and negative experiences that influence students' future rural practice intentions.

Methods: Responses to open-ended survey questions from 3,204 students from multiple health professions and universities were analyzed using two independent methods applied concurrently: manual thematic analysis and computerized content analysis using Leximancer software.

Results: The core concept identified from the thematic analysis was "ruralization of students' horizons," a construct representing the importance of preparing health professional students for practice in nonmetropolitan locations. Ruralization embodies three interrelated themes, "preparation and support," "rural or remote health experience," and "rural lifestyle and socialization," each of which includes multiple subthemes. From the content analysis, factors that promoted students' rural practice intentions were having a "positive" practice experience, interactions with "supportive staff," and interactions with the "community" in general. It was apparent that "difficulties," eg, with "accommodation," "Internet" access, "transport," and "financial" support, negatively impacted students' placement experience and rural practice intentions.

Conclusions: The study findings have policy and practice implications for continuing to support students undertaking regional, rural, and remote placements and preparing them for future practice in nonmetropolitan locations. This study may, therefore, further inform ongoing strategies for improving rural placement experiences and enhancing rural health workforce recruitment, retention, and capacity building.

Keywords: clinical placement, fieldwork, multidisciplinary, practice placement, rural health workforce, undergraduate education

Introduction

Governments have responded to shortages of rural health professionals by adopting strategic approaches to preparing, recruiting, and retaining work-ready graduates.[1–3] In Australia, affirmative action to build rural health workforce capacity has been driven by projections of an impending health workforce crisis, which threatens to exacerbate the negative health differential between nonmetropolitan and metropolitan areas.[4,5] Rural health workforce shortages are compounded by aging of the health workforce,[4,6] high rates of staff turnover,[2,7] and difficulty attracting new staff.[8]

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Part of the solution is to increase the number of students enrolled in undergraduate health programs and to expose them to rural professional placements or fieldwork experience.[1,9] Although much of the focus has been on increasing the rural medical workforce, under the Rural Health Multidisciplinary Training Program, the Australian government funds the University Departments of Rural Health (UDRHs) to support rural health education experiences for students from multiple health professions.[10] Funding for UDRHs is via Australian universities that provide undergraduate health professional programs, in which rural placements often form a compulsory part of students' education.[11,12] To undertake rural placements, students may have to relocate hundreds of kilometers for periods ranging from 1 or 2 weeks up to several months.

Many students have a variety of placements in different settings during their studies, potentially in metropolitan, regional, rural, or remote locations. It is argued that nonmetropolitan placements differ from metropolitan placements,[13,14] as does rural health professional practice. Chigbu[15] argued that the concepts of rural, rurality, and ruralization have fundamentally unique physical, social, economic, and environmental characteristics, while Corbett[16] called for a rural sociological imagination to counter "metrocentric" analytic approaches. Apart from dedicated rural medical programs, much health professional placement research focuses on urban models of clinical education, supervision, and experience. Relatively less regard has been given to rural and remote clinical learning environments.[17] Adopting a "rural sociological imagination" provides a way of envisioning how rural clinical education could be reconceptualized. The way students construct and describe their rural placements has potential to identify both similarities and differences of rural compared with metropolitan placements. In addition to providing feedback about the relative merits of their rural experiences and to help inform improvements, studies have shown an association between positive rural experiences and the likelihood that graduates will enter rural practice.[17–20]

In-depth exploration of positive and negative influences is strategically important; however, many previous studies involved students from only one discipline, a single university, or a particular rural placement program.[21–23] This article is based on a national, multisite, multidisciplinary study carried out collaboratively by ten UDRHs in various regional, rural, and remote locations across Australia. The aims were to investigate the experiences of medical, nursing, and allied health students on UDRH-supported placements, their level of satisfaction with the placement, and its effect on their postgraduate practice intentions. Quantitative findings from closed-ended survey questions have been reported separately.[24] This article reports the results of open-ended questions, which aimed at providing a greater depth of understanding of the lived experiences of the students expressed in their own words, exploring their perceptions of factors that contribute to positive and negative experiences, thus influencing their future rural practice intentions, as well as their suggestions to improve rural placements.

Methods

Primary ethical approval for an online cross-sectional survey of UDRH students was obtained from the University of Newcastle Human Research Ethics Committee, with secondary clearance from 13 other institutional ethics committees associated with the various UDRHs. An introductory blurb on the questionnaire explained the reasons for the survey, how the information would be used, and assured respondents' anonymity; thus, their participation in the survey implied informed consent.

The survey was administered to undergraduate health professional students who completed a UDRH-supported placement in a regional, rural, or remote location between July 2014 and November 2015. Placement sites linked to UDRH are in a wide range of locations. In Australia, locations or population centers are categorized using the Modified Monash Model (MMM) of geographical classification,[25] which are shown in Table 1. Most UDRHs support placements in MMM3–MMM7 locations, with the exception of a small number of regional, MMM2 locations.

Staff from all of the UDRHs participated in developing a set of 21 questions to be asked to students supported by all the UDRHs.[24] Four questions were open-ended, with students asked to describe their experiences living and working at their placement location, to identify what they enjoyed most about the placement, to suggest improvements, and to make additional comments. Each UDRH collected their own students' survey data, downloaded it into Microsoft Excel® spreadsheets, according to an agreed protocol, deidentified, cleaned, and coded data for MMM categories. Administrators from the Australian Rural Health Education Network (ARHEN) aggregated the data into a common spreadsheet for analysis by the ARHEN Student Survey Working Group, a multidisciplinary team of academics employed at different UDRHs.

The research team was divided into two groups to independently undertake "thematic analysis" and "content analysis," with the intention of validating the findings using differing methods.[27] "Thematic analysis" was manual, using an inductive approach based on grounded theory methodology.[28] Aggregated data were divided into six subsets

Table 1 MMM geographical classification categories

MMM category	Description
MMM1	All areas categorized as ASGC-RA1[a]
MMM2	Areas categorized into ASGC-RA2[a] and ASGC-RA3[a] in or within 20 km of a town with a population >50,000
MMM3	Areas categorized into ASGC-RA2[a] and ASGC-RA3[a] not in MMM2 and in or within 15 km of a town with a population of 15,000–50,000
MMM4	Areas categorized into ASGC-RA2[a] and ASGC-RA3[a] not in MMM2 or MMM3 and in or within 10 km of a town with a population of 5,000–15,000
MMM5	All other areas in ASGC-RA2 and ASGC-RA3[a] but not MMM2 to MMM4
MMM6	All areas categorized into ASGC-RA4[a] not on a populated island separated from the mainland in ABS geography and >5 km offshore
MMM7	All other areas, being ASGC-RA5[a], and areas on a populated island separated from the mainland in ABS geography and >5 km offshore

Notes: Permission to use this classification table was obtained from the Health Workforce Division of the Australian Government Department of Health (December 8, 2017).[25] [a]ASGC-RA1, major cities; ASGC-RA2, inner regional; ASGC-RA3, outer regional; ASGC-RA4, remote; ASGC-RA5, very remote.[26]
Abbreviations: ABS, Australian Bureau of Statistics; ASGC-RA, Australian Standard Geographical Classification – Remoteness Area; MMM, Modified Monash Model.

and allocated to researchers (~500 responses each) to code and extract emergent themes, ensuring that no researchers were given the data from their own UDRH. Other than the pragmatic need to share the task of analyzing qualitative responses from over 3,000 students, this approach contributed to analytical rigor and mitigation of bias. It also facilitated robust, in-depth consensus discussion. When data saturation was reached, common themes and subthemes were categorized and entered into a customized template, with exemplar quotations.

"Content analysis" was undertaken by researchers not involved in the thematic analysis. Leximancer software (info.leximancer.com/) was used, which examines text data for word associations and, on the basis of the results, generates themes and a concept map. The software qualitatively analyzes semantic patterns,[29] thus generating data categories that flow directly from the text[30] and positioning concepts on the map using frequency and co-occurrence of words and phrases.[31] Themes were identified around highly connected concepts, the relative location of concepts, and theme circles indicating connectedness and affording an understanding of association. Further, in order to analyze for factors that constituted positive and negative influences, nodes from two quantitative key dependent variables from the survey results[24] were overlaid on the Leximancer concept map. These two nodes represented the students' satisfaction with their placements and their self-reported change in rural practice intention after versus before the placement.

The researchers exchanged information via email, Dropbox™ (https://www.dropbox.com/), and Zoom web-conferencing (San Jose, CA, USA; https://zoom.us/) to arrive at a shared understanding. Given their insider perspective, it was necessary for the researchers to acknowledge potential bias, set aside preconceptions, and allow the research processes and outcomes to be adaptive and open to change.[32] Integration of both forms of analysis also helped mitigate bias and led to reinforcement, verification, and refinement of the emergent themes. The results below are the integrated findings.

Results

Overall, 3,204 students answered at least one of the questions, many responses exceeding 100 words. The majority of the respondents were female (79%), and the mean age was 26 years, with 88% aged between 18 and 35 years and the remainder being older. Nursing and midwifery students made up 38%, medical students 16%, and allied health students (including dentistry and pharmacy) the remainder. Placement duration varied from a week or less (4%) to >6 months (3%), with 73% being >2 but <12 weeks. Fifty-three percent of placements were in MMM3 and almost 80% in MMM3–MMM5 locations. Placement settings varied widely, but 44% were in public hospitals and 22% in community health facilities.

The emergent, overarching core concept was "ruralization of students' horizons," representing the contextualization of students' educational and social experiences in a rural context and preparing them to live and practice in a nonmetropolitan location. As listed in Table 2 and represented diagrammatically in Figure 1, the core concept of "ruralization of students' horizons" is comprised of three interconnected themes: "preparation and support," "rural or remote health experience," and "lifestyle and socialization," represented as overlapping zones in the diagram. Each theme is described below, together with relevant subthemes, including illustrative quotations from students identified by gender, occupation, and MMM location of their placement (Table 1). It may be

noted that while the themes are in some ways sequential, progressing toward "ruralization" at the top of the diagram, as indicated by the arrows, in other ways they exist contemporaneously, as indicated by the fact that they overlap.

The Leximancer concept map generated five theme circles: "experience," "staff," "placement," "accommodation," and "difficult" (Figure 2). The addition of nodes creates the spatial configuration of the theme circles to demonstrate the relationships between words used by participants. In addition, as explained under the "Methods" section, nodes were tagged for "satisfaction" and "intent to change." The former was collapsed into two categories ("satisfied" and "unsatisfied or neutral") and the latter into four categories ("remain positive," "remain negative," "become negative," and "become positive"). A dividing line purposively drawn by the researchers represents a horizon separating positive and negative nodes (Figure 2).

Table 2 Emergent themes and subthemes related to the core concept of "ruralization of students' horizons"

Theme: preparation and support	
Subthemes	Placement orientation
	Accommodation
	Financial support
	Educational resources
Theme: rural or remote health experience	
Subthemes	Patient presentations and access
	Practice education and supervision
	Teamwork and collaboration
Theme: rural lifestyle and socialization	
Subthemes	Social interaction
	Indigenous health and culture
	Community engagement

Preparation and support

The ruralization journey begins with students' preparation for placement in a rural setting, including travel arrangements, booking accommodation, and orientation. Students commented on "placement orientation" and the need for information about the placement location, services available, social opportunities, and specifics about the placement site itself. Most students felt that they were well prepared and that this contributed positively to their experience.

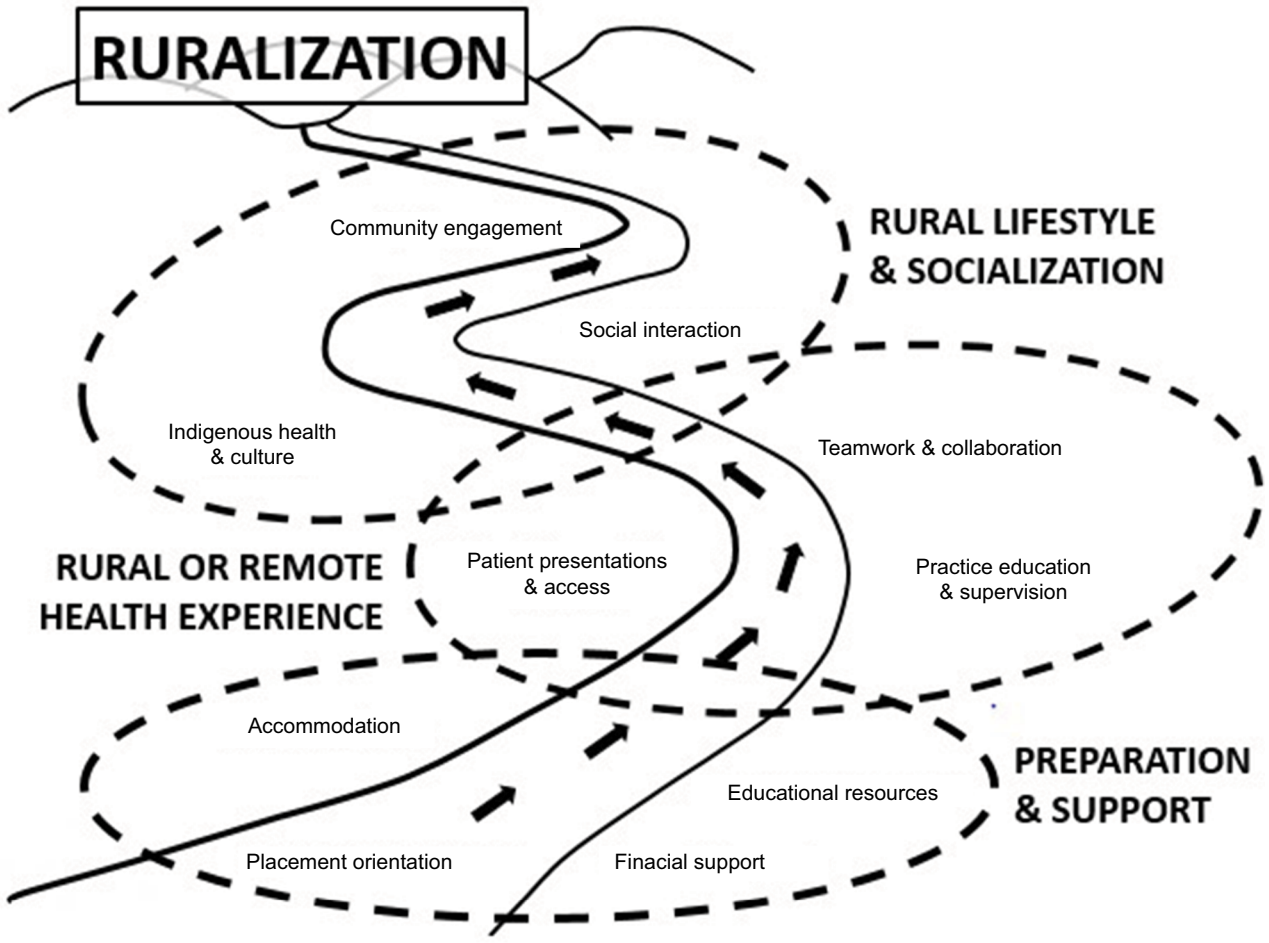

Figure 1 The conceptual model of "ruralization of students' horizons," showing three overlapping zones or stages representing the emergent themes.

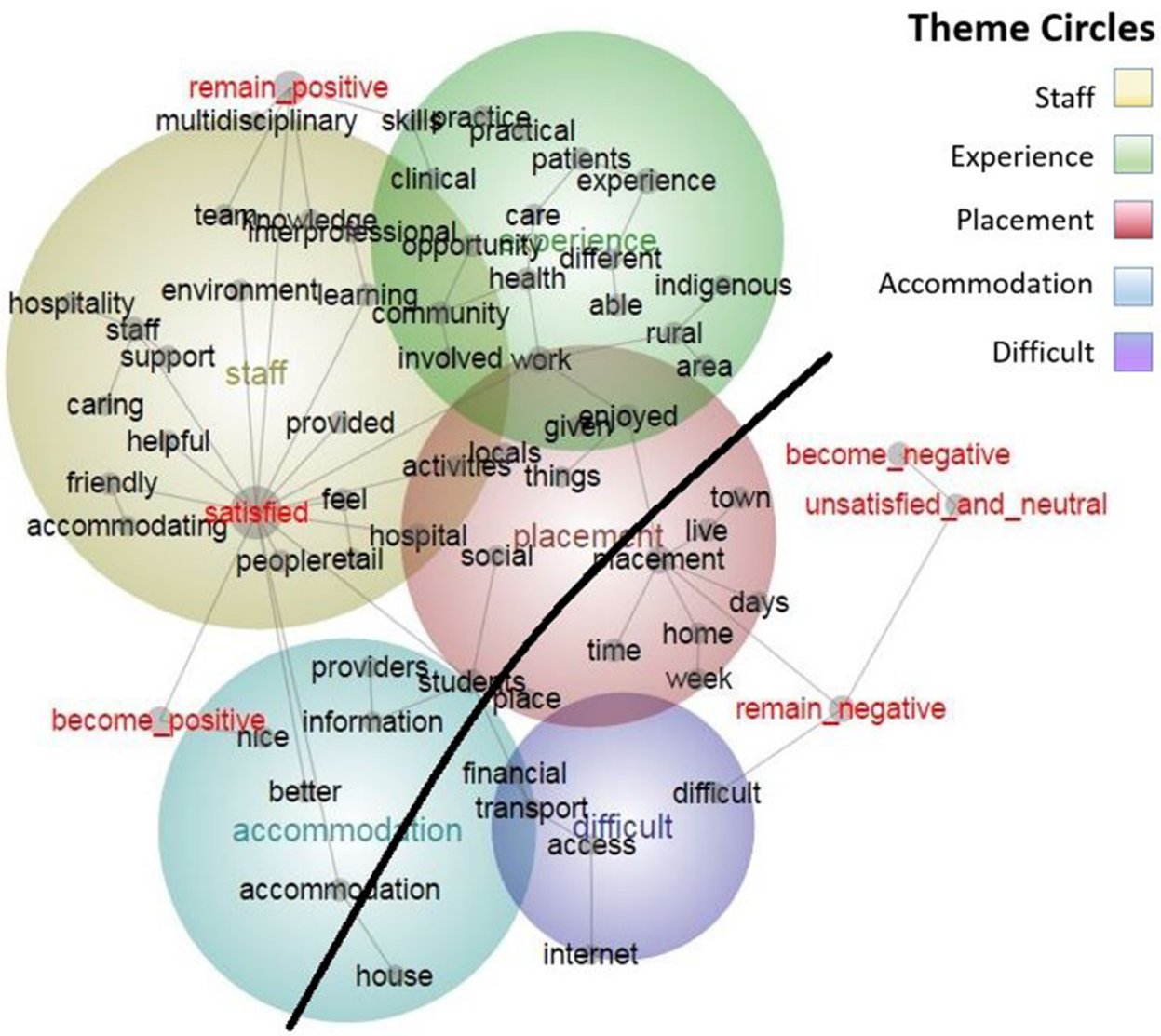

Figure 2 Leximancer concept map showing: theme circles – "staff," "experience," "placement," "accommodation," and "difficult"; nodes in the upper left – "satisfied," "remain positive," and "become positive"; and bottom right – "unsatisfied and neutral," "become negative," and "remain negative." A heavy black line purposively placed to represent the horizon between "satisfied" and "positive" elements versus "unsatisfied" and "negative" ones.

> The information provided to me prior to starting placement was fantastic and really made me feel prepared. The support I received throughout placement and the resources made available to me were wonderful and very helpful. [Female, Occupational Therapy, MMM3]

However, some students felt that preplacement material and orientation could be improved and suggested using the experiences of previous students.

> I believe a town orientation should be included and a presentation about the general health and statistics of the town. [Female, Nursing, MMM4]

> More formal orientation (possibly designed by former students) to easily access where the "good" things in town are and to make the move easier to adjust to. [Male, Medicine, MMM3]

Accommodation also featured strongly from both positive and negative perspectives (Figure 2). Students referred to the accommodation provided by the UDRHs variously as "good," "very good," "great," "excellent," "substandard," "basic," and "adequate." Examples of positive comments are as follows:

> Perfect accommodation very clean and perfect location for walking to work (placement). […] The placement has made

> me more eager to work as a nurse sooner and in a remote/rural location. [Female, Nursing, MMM4]

Students expected accommodation to be clean, comfortable, and well-maintained.

> It [the accommodation] is the first thing that a student sees when they arrive for placement and it sets the tone of their stay in that area. It is going to be their home for the next two weeks, it needs to look inviting. [Female, Nursing, MMM5]

They valued accommodation being conveniently located to the placement site, shops, and other amenities, some saying that it helped them focus on their learning.

> Living at the placement locations created a stress free environment. All facilities were within walking distance. This environment allowed extra time to concentrate on studies and enabled integration into the community. [Female, Nursing, MMM3]

Poorly maintained accommodation, together with inaccurate or lack of orientation and preplacement information, led to overall dissatisfaction with the placement.

> My accommodation was sub-standard. Upon entry, I was upset to find mouse droppings in the kitchen as well as spiders in various locations. I was not told to bring any linen or cleaning supplies and did not receive any orientation material. [Male, Podiatry, MMM3]

Issues related to accommodation overlapped with "financial support," as evident in Figure 2, as well as with travel and transport. One student framed it concisely, commenting: "Country placements are difficult due to finances and distance from normal living environment" [Female, Physiotherapy, MMM3]. Distance and isolation compounded financial issues, which led to some negativity.

> In order to get more students doing rural placement the accommodation fee and travel expense should be supported by the University, as it is a really difficult situation financially especially in rural placement because we need to pay double rent and we are not be able to work at all out side of the placement. [Female, Nursing, MMM3]

Some students were dependent on scholarships or other forms of financial support, one student observing that, "With the help of the scholarship, I was able to immerse myself in the spirit of the placement" [Female, Nursing, MMM3]. Others highlighted the nexus between financial support, travel, and accommodation in remote locations where alternative accommodation may be scarce and expensive.

> I found that the accommodation scholarship was a massive assistance in completing the full clinical rotation. Without the accommodation available for students here, I would have been competing against mining wages for a rental property for a short term lease. [Female, Dentistry, MMM6]

They were appreciative of some UDRHs providing accommodation subsidies.

> This placement would not have been suitable for someone without a license, due to lack of transport. It would also have been difficult without funding (finance), however, I received that from the university so it worked out fine. [Female, Optometry, MMM4]

However, other students found that a scholarship was not available because the location of their placement did not meet funding criteria.

> They should place those needing financial assistance in areas that qualify them for the scholarship. I needed financial assistance and later found that [place name] isn't rural enough for me to apply. This was especially frustrating when all my money was spent on alternative accommodation. [Female, Pharmacy, MMM3]

In general, students valued the "educational resources" available through the UDRHs, including the support of the UDRH academics.

> Fantastic teaching, great student support, wonderful learning environment (computers and facilities at [the UDRH]), great food for teaching events, great community engagement and learning opportunities […] [Male, Dentistry, MMM3]
>
> I was extremely satisfied with the facilities provided at the university [place name] education centre, which were conducive to learning. It was a great environment to work in. The staff were also very supportive and willing to help in any way they could. [Female, Nutrition and Dietetics, MMM3]

While educational resources were often referred to using superlatives, such as "excellent," "fantastic," and "amazing," besides the provision of better Internet connectivity, suggested improvements included more "formal" or "structured" teaching and learning sessions.

Many students commented on Internet access, which they considered crucial to both maintaining social connections and enabling a high-quality learning environment. In Figure 2, "Internet" occurs on the negative side, associated with the "difficult" theme circle because of the frequency that students reported poor-quality Internet access, causing dissatisfaction.

> The internet provided was unreliable, continually cutting out. I was unable to do uni work or submit uni assignments on time with this internet and had to resort to using my phone internet, which was a very big, unexpected expense. [Female, Medicine, MMM2]
>
> […] had no wifi access and the internet connection available on portable USB internet sticks was poor, making it difficult to do uni work in your accommodation at times. It would be beneficial to have appropriate wifi access. [Female, Speech Pathology, MMM4]

Regarding Internet access, one student commented, "In this day and age it is essential" [Female, Pharmacy MMM4].

Rural or remote health experience

This theme emerged from the manual thematic analysis (Figure 1) and was reinforced by Leximancer content analysis, with clustering of a large number of positive word associations around the theme circles of "staff" and "experience" in Figure 2. Students' experiences of rural placements often surpassed expectations, which impacted on their practice intentions.

> Prior to this placement, when asked what sort of Nursing I wanted to do my answer was always "doesn't matter, I just want to be a nurse" […] Now I know where I want to work, a district or rural facility with strong links to the local community. [Male, Nursing, MMM5].
>
> It was surprising, satisfying and more than I thought it could be. People who work in rural communities fulfil a multiplicity of roles and carry an exposure that many anonymous, urban agency workers will never have to understand. [Female, Social Work, MMM3]

Many students valued the diversity of "patient presentations and access," which enhanced their experience, enabled them to extend their knowledge and skills, increased their work-readiness, and improved their understanding of rural practice.

> I acquired more clinical experience during my placement than at any other placement I have been on so far. It was a good mix of cases also and I definitely feel more prepared for professional life following graduation. [Female, Nursing, MMM3]

Students made favorable comparisons with previous placement experiences, including those in metropolitan locations.

> Exposure to a wide variety of cases and conditions, which you may not get to see during a metropolitan prac, as often you are placed in more specialised/specific areas. [Female, Physiotherapy, MMM3]
>
> Rural hospitals enable the learning of students in my opinion, much greater than city hospitals. Having the time to spend talking and teaching the students rather than students standing by and watching. [Female, Nursing, MMM5]

Students' rural placement experiences were unique, rich, and varied, as well as transformative in influencing intentions to consider a rural career.

> It was one of the best placements I have completed and I saw a diverse patient group. […] I also think it's a very good example of how rural settings can be really great to live/work in. I am seriously considering working in a rural area and this particular placement really inspired me to do so. [Female, Medicine, MMM3]

Students' perceptions about "practice education and supervision" were also generally positive. "Staff" formed a theme circle with word associations such as "helpful," "caring," "friendly," and "accommodating" in the "satisfied" and "remain positive" areas of the concept map (Figure 2). Students commented on the high quality of the supervision and education support they received from their clinical supervisors and UDRH staff.

> […] the doctors were friendly and happy to teach, and I was allowed to function as part of the team. Also, no mandatory boring token education sessions, so I could spend more time learning on the ward. [Male, Medicine, MMM6]
>
> The community dietitians have been fantastic. […] very supportive and always willing to give us feedback. They have pushed us along when we needed a push, and referred us to other health professionals in the organization that can assist us with our project. [Female, Nutrition and Dietetics, MMM2]

It also appeared from the content analysis that supervision experiences were generally positive, while there was also statistical evidence in the quantitative data analysis that practice supervision was strongly influential on students' satisfaction with their placement and on rural practice intention.[24] Although not strongly represented, there was some evidence of negative supervision experiences in the thematic analysis.

> It was at times an extremely stressful experience. I received little to no support or direction from my direct supervisors in the placement organization. [Female, Social Work, MMM5]
>
> The educators need to be more present and seem like they care more for the students. Felt alone and abandoned at times. [Female, Nursing, MMM3]

Students valued the interprofessional "teamwork and collaboration" they observed during their placements and felt that it increased their understanding of other health professionals' roles.

> I enjoyed having the opportunity to work with and learn more about other disciplines, […] This gave me a better understanding of the role of each practitioner in the patient's care and the extent of communication between disciplines. [Female, Nutrition and Dietetics, MMM3]
>
> I really valued being a part of a multidisciplinary team in terms of patient care, it was great to see the interaction between the medical and allied health team to achieve the best patient outcomes. [Female, Physiotherapy, MMM3]

Frequent references were made to working in a multidisciplinary team and to interprofessional learning. Students observed that teamwork appeared to be a characteristic of rural practice, one commenting that, "I love the multidisciplinary care that is provided in more rural areas" [Female, Nursing, MMM3], while another that "The interprofessional activities really helped link together how different sectors of the health industry work together in a rural setting" [Female, Pharmacy, MMM3].

While developing students' clinical knowledge and skills, interprofessional learning also created opportunities to meet students from other disciplines and develop relationships.

> I really enjoyed the teddy bear hospital and interprofessional learning modules and I think that more of those are a great idea. It gives students a chance to meet other students and learn from others. [Female, Medical Radiation, MMM3]

Interprofessional social interactions overlap with the next theme, particularly the subtheme "social interaction."

Rural lifestyle and socialization

Opportunities to engage with and feel part of the local community were highly valued. Students expressed feelings of being welcomed, with comments such as, "There was a great sense of community and everyone was very welcoming" [Female, Nutrition and Dietetics, MMM2] and "The rural community was so friendly and welcomed me in" [Female, Nursing, MMM3]. Those who experienced a sense of belonging demonstrated a heightened sense of attachment to rural locations and increased likelihood of becoming rural practitioners.

> Working in a rural community is not a "second best" option, it is an entirely different lifestyle and comes with its own joys and challenges. I can't wait to work in a rural community. [Female, Speech Pathology, MMM3]

In some cases, for those already inclined toward rural practice, the placement experience strengthened their intentions.

> Life as a rural general practitioner was pretty appealing to me before undertaking this placement. It showed me how dynamic rural medical practice is and how there are many lifestyle perks to practicing medicine rurally – being close to nature, being involved with the community, etc. [Female, Medicine, MMM6]

Three subthemes emerged under this theme, the first of which was "social interaction." Students commented on the stress of being separated from family and friends. In sharing accommodation with other students, they developed other supportive social networks that also reinforced the interprofessional collaboration referred to under the previous theme.

> Living in the same area as the other students was really wonderful. We could all get together of an evening and chat and hang out, as well as go camping and sightseeing on the weekends as a group. [Female, Medicine, MMM6]
>
> […] we would share our placement experiences and exchange knowledge regarding our respective professions. Essentially, living at student accommodation promoted interprofessional interaction. [Male, Physiotherapy, MMM3]

The social interactions and relationship building that occurred outside formal education and placement settings enhanced students' sense of belonging.

> Out of hours I was invited to social events with both fellow students and my hospital supervisors who introduced me to further staff at the hospital. This aided my working relationships and added value to the educational experiences I was offered during my placement. [Female, Medicine, MMM6]

Students who overcame the initial challenge of social isolation, whether through peer interaction or socializing with others, found the rural placement experience rewarding and that it contributed to their personal and professional development.

> The isolation did hit me in the first week and at times I felt pretty anxious about the whole experience. The more time I spent there the more confident I felt about it and the more enjoyable it became. […] you develop a sort of independence that challenges you to figure out and reflect on the sort of person and nurse you want to be. [Female, Nursing, MMM5]

Another aspect of socialization that featured strongly was "indigenous health and culture." This is evident from the concept map (Figure 2), where the word "indigenous" occurs

in the "experience" theme circle on the positive side. Respondents identified "interaction with aboriginals, learning about their culture and history" [Male, Pharmacy, MMM6] as one of the things they most enjoyed about their placement.

> It was challenging at first, but once I had come to terms with the cultural differences, it was incredibly enjoyable. It was a pleasure to work with Aboriginal People in both a social and professional capacity. [Male, Nursing, MMM6]

For some, meeting and working with aboriginal people was a new, enlightening experience.

> First time I spoke to Indigenous [people] and I now feel more comfortable having a conversation with them. [Female, Nursing, MMM3]
>
> I was able to engage with the Aboriginal community like I hadn't before and it was an experience I'll never forget. […] It really was one of the best experiences I've had as a student. [Female, Nutrition and Dietetics, MMM3]

Others found the living conditions and health of the indigenous population confronting and disturbing. While some students felt it tainted their experience, others were motivated to return as rural or remote health practitioners.

> The majority of patients were of Aboriginal descent with complicated co-morbidities. I saw many serious wounds that I would not have seen in any other state of Australia. It has given me a desire to return to [Northern Territory]. [Male, Podiatry, MMM6]
>
> I really enjoyed my placement and made the most of every experience I was offered. I was sad to leave. I really valued my time working in Aboriginal health and know I will be back once graduated to work in this field again. [Female, Nursing, MMM5]

Although all students who undertake UDRH-supported placements are expected to have indigenous cultural (awareness) training as part of their preparation for rural practice, some students' responses indicate mixed expectations and experiences.

> I would strongly recommend the cultural awareness talk and mental health information sessions to everyone as they were well conducted and very related to what we were doing. [Female, Pharmacy, MMM5]
>
> The seminars were really helpful and gave me a good overview of the Aboriginal people. [Female, Nursing, MMM4]

Some students made suggestions for improvement, including learning more about how they could communicate with aboriginal people in a culturally sensitive way.

> At times the cultural awareness felt more like a history lesson and not as beneficial as it would have been to receive information on how to approach and communicate effectively. [Male, Nutrition and Dietetics, MMM6]
>
> I feel it could be improved by discussing ways in which to communicate with the Aboriginal community and raising awareness of culturally sensitive issues that should be recognized. [Female, Nutrition and Dietetics, MMM3]

The subtheme of "community engagement" provides evidence that interacting with the community has a strong effect on "ruralization." Students who were immersed in the wider local community, enjoyed the rural lifestyle, built new local friendships, or participated in community-oriented activities demonstrated satisfaction with their placement experience and were more likely to consider rural practice.

> Got to know the community through going to the gym and at the running festival. Met lots of locals and made lots of friendships and expanded my community network. So much better than the city. [Female, Physiotherapy, MMM3]
>
> They made me feel very welcome. I liked working at the location, especially going on home and school visits. It made me feel like we were doing as much as we could for the clients. [Female, Speech Pathology, MMM5]

The value of community engagement was also reflected in the Leximancer concept map within the three overlapping theme circles of "placement," "experience," and "staff." Associated words included "involved," "enjoyed," "community," "locals," "social," and "friendly," clustered around the nodes tagged "satisfied" and "remain positive." There was also an association between the students' health professional roles and community involvement, some recognizing their capacity to give back to the community as a health professional.

> I thoroughly enjoyed the range of activities that I had an opportunity to take part in outside of the placement project. These included healthy lunchbox sessions for after school learning, healthy breakfast session, and Aboriginal health careers day. [Female, Nutrition and Dietetics, MMM3]
>
> Due to this experience in a rural pharmacy setting, I have gained a wider appreciation of pharmacy outside of metropolitan areas and what I can do to contribute to future progress. [Female, Pharmacy, MMM3]

Even though they enjoyed the rural experience, some students acknowledged that living and working in a rural community made them aware of some of the challenges faced by people in accessing health care services in small communities.

> It could be quite frustrating at times but it did make me appreciate the vast number of challenges that people living in rural and remote areas can face when trying to access health services. [Female, Occupational Therapy, MMM6]

Although not all students had a positive rural or remote placement experience, the findings were generally positive, as expressed in the following quotation:

> Would do all my placements rural if I could. It was well organised, better than most of the city ones from what I can gather, we got a lot of information prior to going and think there should be better promotion of rural placements as they are excellent. [Female, Nursing, MMM5]

Discussion

Students construct their own reality or social world that defines their understanding of a "rural placement" through interactionism. Strauss[33] proposed that there is an endless array of social worlds, defined by common or joint activities, communication, concerns, and values, in addition to more palpable characteristics, such as roles, memberships, locations, and sites. Social worlds intersect;[34] thus, although defined by different characteristics, the social worlds of the students intersect with those of UDRH academic staff, members of the health care team, and local community members. These interactions and experiences lead to the students constructing a unique perspective that is best understood through the way they represent it, in their own words. In this study, integrating the findings of thematic and content analysis illuminates how the social worlds of UDRH students on rural placement intersect with the social worlds of students from other disciplines, rural health professionals and academics, and members of the wider rural community to influence their perceptions of living and working in a nonmetropolitan location.

In accordance with the aim, this study used first-hand descriptions of the lived experiences of health professional students who participated in UDRH-supported nonmetropolitan placements, leading to an in-depth understanding and insights into the conceptual pathway that potentially leads students through a process of "ruralization." When students have positive rural placement experiences or that they are at least able to rationalize negative aspects of their placement, they progress toward the goal of being "ruralized" and, to varying degrees depending on their experiences, may develop rural practice intentions.

The process of ruralization may begin prior to the student undertaking a placement, particularly for those students who come from a rural background.[19,35] Beyond that, however, the emergent conceptual model explains a pathway to ruralization through three distinctive, though overlapping themes or zones, as in Figure 1. In the preparatory stage, the students have expectations about access to conveniently located, good-quality accommodation, either free, at low cost, or supported by a grant. They also expect accurate information that orients them to their placement location prior to arrival, in addition to access to educational resources that allow them to seamlessly complete their studies, including reliable Internet access. These forms of preparation and support have a strong influence on the ruralization process, as supported from other studies of students' rural placement experiences.[36] If expectations are not met at this stage, the possibility of students being ruralized is immediately compromised. It is imperative that universities and other stakeholders involved in rural placements pay close attention to such fundamentals.

When students were engaged in the practice experience, they valued the ready access to patients with a wide range of conditions, a recognized characteristic of rural generalist practice.[13,14,36–38] The diversity of the clinical learning environment and positive relationships with practice supervisors can strongly influence students' satisfaction. In a study of a small group of rural medical students on a long-term placement, Bartlett et al[38] similarly found that students recognized that they had rich learning experiences, which counterbalanced other negative impressions. To optimize the placement experiences, educational institutions and health service providers should collaborate in and be acutely aware of the strategic importance of providing welcoming, rich, positive, supportive, and holistic learning environments, where students are comfortable in their interactions with supervisors. In rural placements, this can be critical in reinforcing or changing students' future practice intentions.

Students appreciated interprofessional interaction and collaboration, which is also regarded as a characteristic of rural practice,[36,37,39] and they valued opportunities to interact with students from other disciplines. Placing students from different health disciplines in shared accommodation not only creates an important social network, but it is an adjunct to the interprofessional collaboration and teamwork that occur in formal practice or education settings.[39] Social interaction is significant in the ruralization process, reducing the risk

of isolation of students who are dislocated from their usual support networks.

Ruralization is optimized when students' experiences extend beyond the placement setting, and they experience the uniqueness of "rural" or "remote" practice and lifestyle.[15,37,39] However, not all students reach that stage of the ruralization journey. Students are most likely to be "ruralized" if they have had positive experiences at the earlier stages and are thus more inclined to integrate into the local community, accepting variations from the norms they are exposed to, including indigenous health and cultural experiences. Indeed, students who have negative placement experiences at any stage are less likely to complete the process of "ruralization" and thus not develop the hoped-for goal of having strong rural practice intentions. All stages of the model are thus important.

As in Australia, governments in many Western countries are investing substantially in nonmetropolitan undergraduate educational programs to help build rural health workforce capacity.[40–42] Evidence exists that rural exposure at undergraduate level influences students' decision-making about pursuing a rural career.[7,19,43] This article adds depth to that evidence by exploring the nature of the key influences and the interplay between them, namely access to high-quality educational and social infrastructure, a focus on the positive aspects of rural and remote practice, and providing opportunities to engage with other students and with the local rural community.

In Australia, the multidisciplinary UDRHs play a valuable role in supporting meaningful regional, rural, and remote placements for health professional students. In general, the availability of resources to achieve course requirements and complete assessment tasks gave students confidence that their learning would not be compromised. Students often feel anxious about professional placement experiences,[44–46] and this can be amplified by the distance and the unfamiliarity of rural and remote placements. Prior to placement, students must be given information to prepare them professionally and socially for unique aspects of rural and remote life and practice. They should feel safe, feel comfortable, and be able to stay connected with family and friends, and placement supervision must be welcoming and of a high standard so they quickly develop a sense of belongingness.[47]

The financial cost of placements can be substantial, adding to students' anxiety. In this study, respondents expressed concern about the financial burden of rural placements. Although one study of Australian medical students found that perceptions of financial support were not predictive of rural career intent,[48] others in Australia and elsewhere have reported concerns about the cost of accommodation,[45] inability to continue part-time work, and the cost of travel,[38] given placement locations far from home. While some UDRHs provided financial assistance, students identified difficulty accessing other forms of scholarship support. Further consideration should be given to how best to help students with the costs of rural and remote placements, particularly as such placements are often a course requirement and not necessarily the student's preferred placement option. Students need to feel supported, both financially and academically.[49]

Strengths and weaknesses of this study

Studies of students' rural placement experiences often comprise small samples, are localized to one region, and involve students from only one discipline or university.[50] This study analyzed data from more than 3,000 students, from more than 20 health professions, enrolled at over 30 universities who were on placement supported by multiple UDRHs in locations ranging from regional to remote.

Using the combination of manual thematic analysis and computerized content analysis to generate theoretical insight, both methods informed the development of the conceptual model of "ruralization of students' horizons" and elucidated how phenomena interact to positively or negatively influence students' level of satisfaction and rural practice intentions. As such, the study provides in-depth insight into the dynamic transactions between rural placements and multiple elements that collectively foster students' intentions to pursue a rural career. This forges new appreciation of how supported rural placements help to recruit graduates.

The main limitation of the study was that data were confined to responses to four open-ended survey questions. It was not possible to probe, test, and clarify students' comments, as would be the case if data were collected using in-depth interviews.[51]

Conclusion

There is an unquestionable need to build nonmetropolitan health workforce capacity in order to meet future service demands. It is improbable that there is a single, one-size-fits-all, sustainable solution, given the distinctiveness of different regional, rural, and remote locations and communities, as well as different professions; however, this study identifies important stages in a process of ruralization, with the broadening of students' understanding and appreciation of rural practice and lifestyle. Implementing the recommendations embedded in the discussion above has potential to enhance students' rural health learning experiences, as well as to make

rural practice more satisfying and attractive to new graduates and early career practitioners.

The findings of this study suggest that, under the Australian Government's Rural Health Multidisciplinary Training Program, UDRHs have been facilitating satisfying placements for students from a range of disciplines. The component parts of the ruralization process apparently strengthen the rural practice intentions of students, while the interplay between positive and negative influences suggests a need to study the relationship between ruralization and rural practice intention more rigorously. Better understanding the factors that lead to "ruralization students' horizons" could inform future policy and strategies to build rural health workforce capacity. The further challenge is to convert rural practice intentions into reality, demonstrably and sustainably building the workforce in the longer term. Future research, therefore, should also focus longitudinally on graduates from the various health professions that eventually become rural practitioners and who choose to stay in rural practice for extended periods, thus helping to address health service gaps and unmet community health care needs.

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Disclosure

All of the authors are employed under the Rural Health Multidisciplinary Training Program and work at various University Departments of Rural Health. The authors report no other conflicts of interest in this work.

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